



# **Global Awareness Product Area Directorate**

## **Technology Transition & Architecture Division (DIAT)**

**Mr. Orazio DiMarca  
ESC/DIAT  
781-377-9402**



# Background

- Requirement
- C2 Vision
- Spiral Development
- Esc Reorganization



# The Requirement

The **right** information at the **right**  
time displayed in the  
**right** way so.....

Commanders can do the **right** things at  
the **right** time in the **right** way



# C2 Vision

**“Provide the products, services, and technology base to enable the collection, fusion/correlation, and reporting of all information necessary for civilian government authorities, the military commanders, and warfighters to maintain tailored situational awareness in peacetime and wartime anywhere in the world.”**



# C2 Vision

## Common Operating Environment

**Global,  
Integrated,  
Interoperable,  
Affordable**

Global Command & Control



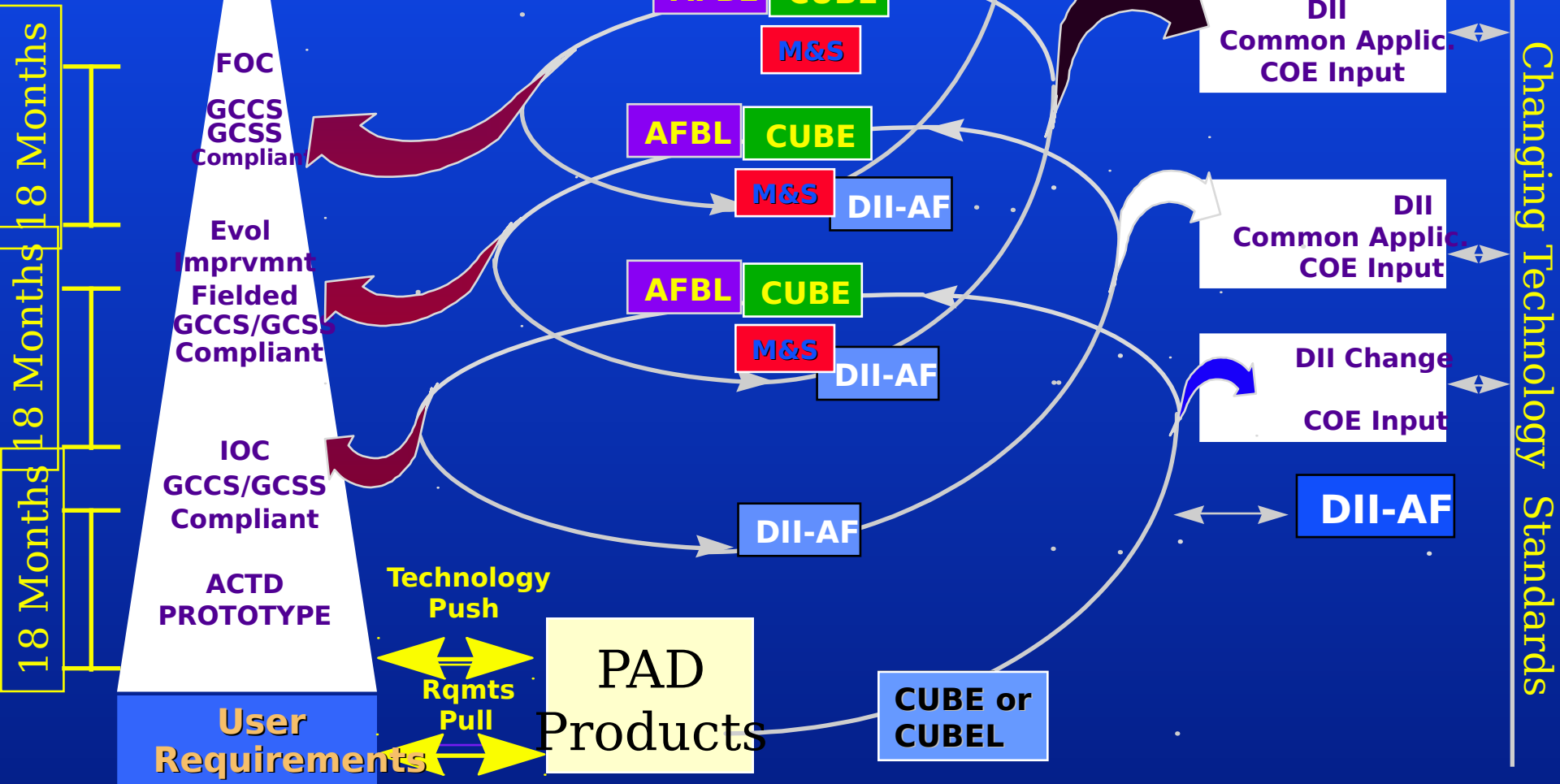
System

**Common  
Terminals  
& Applications**



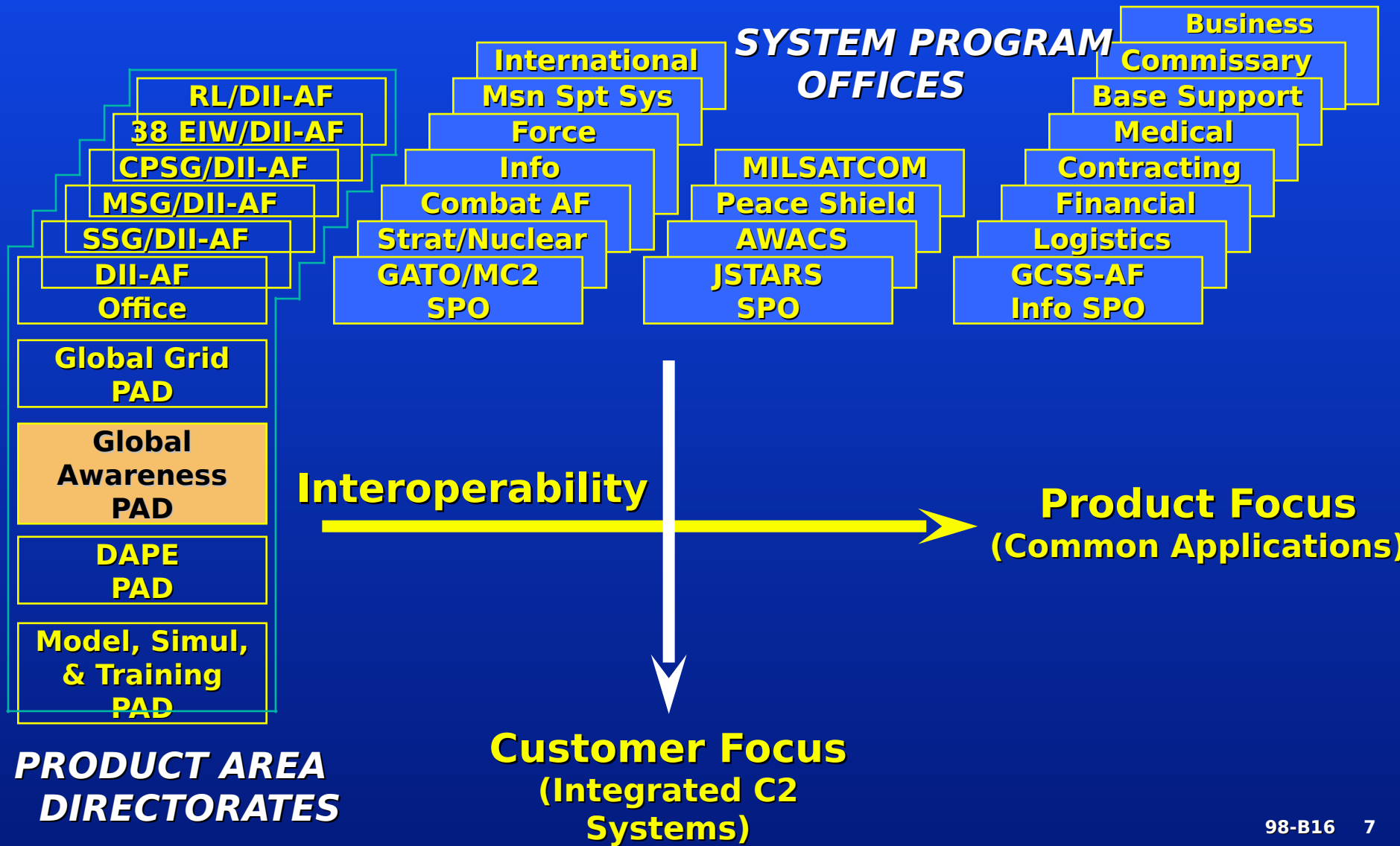


# Spiral Development



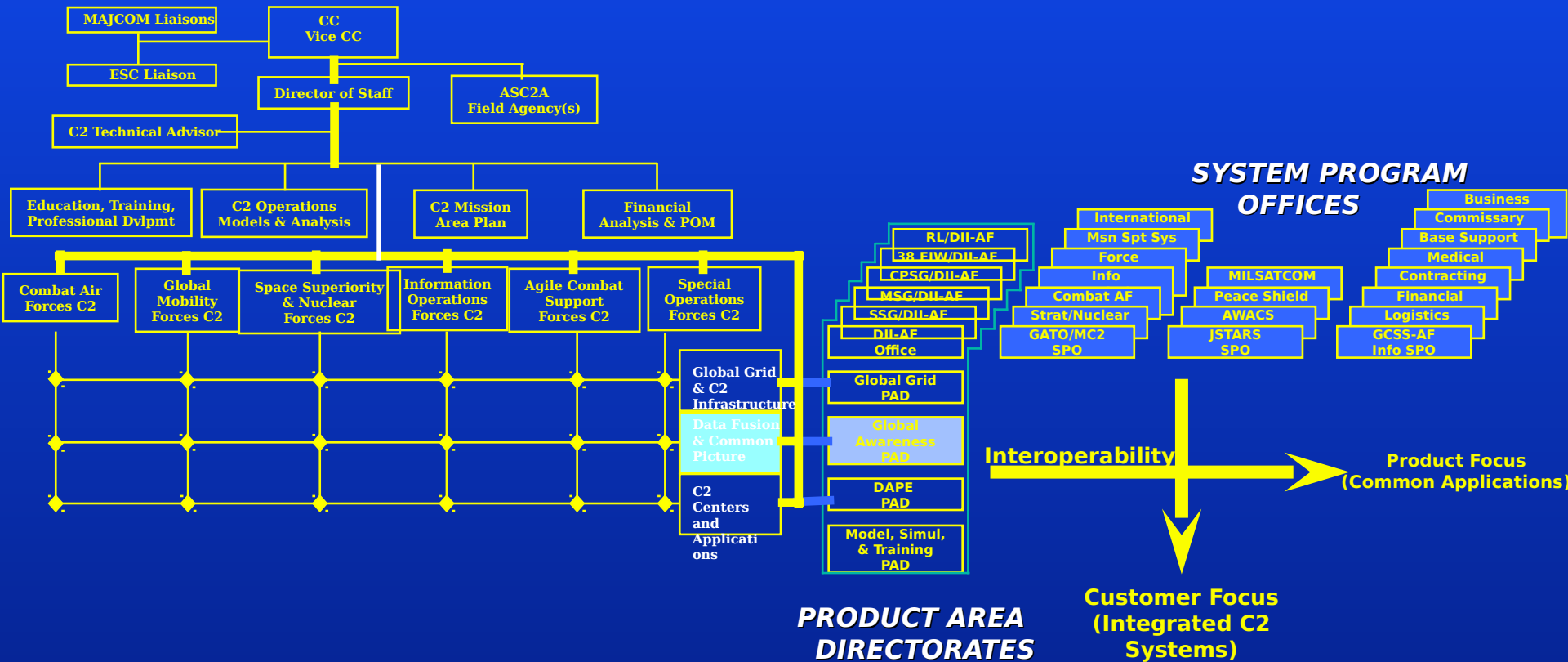


# ESC Re-Organization





# The Organizational Relationship







# **Global Awareness Product Area Directorate (PAD) ESC/DIA**

- **Mission**
- **Organization**
- **Products**



# **GA PAD Mission**

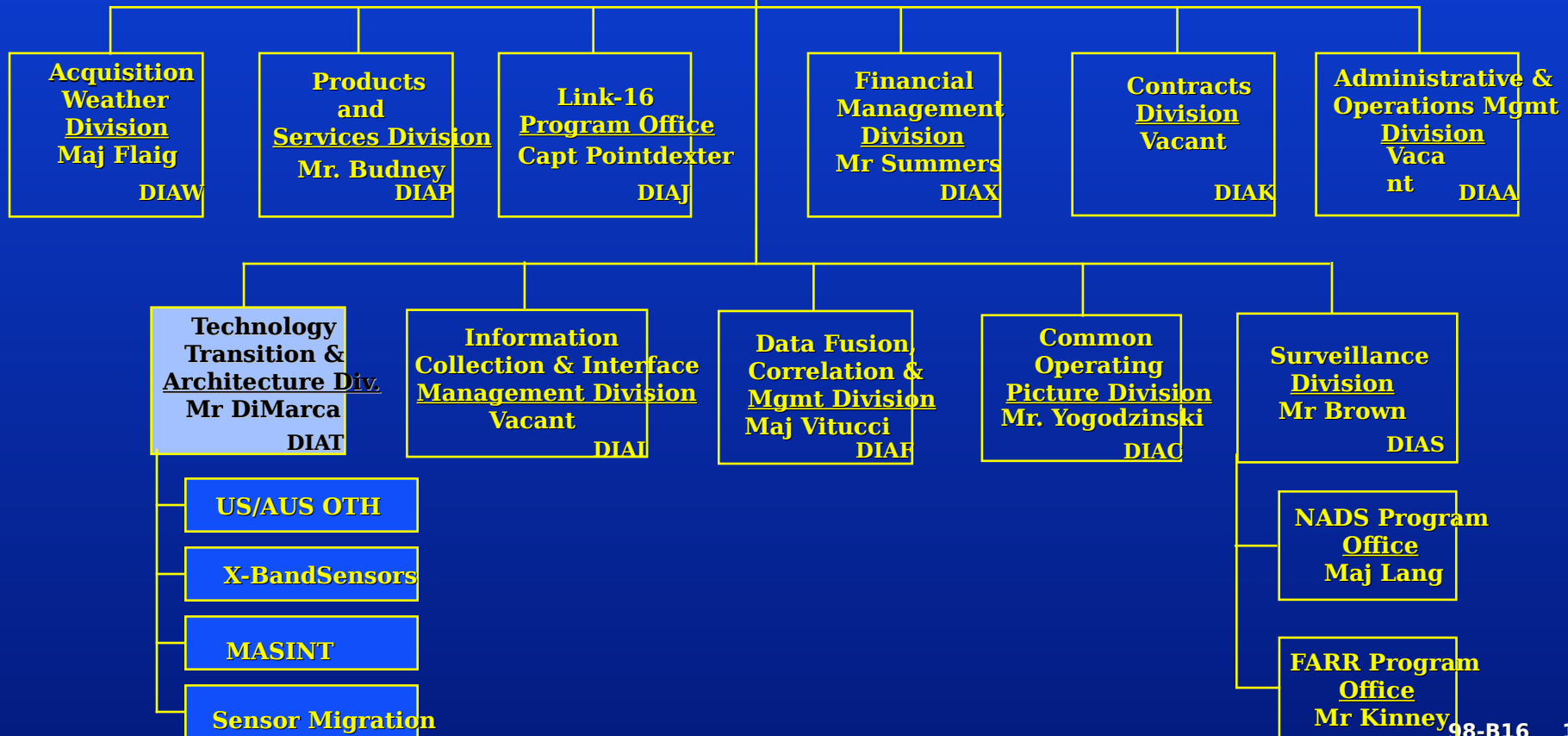
**The Global Awareness Product Area Directorate (GAPAD) will gather and integrate all information to produce a Common Operating Picture (COP) required by AF C2 users and Civil Authorities. This information shall be compliant with the DII Common Operating Environment. The GAPAD will also produce and sustain information gathering products not available from other sources.**



# Global Awareness Product Area Directorate (PAD) ESC/DIA

Global Awareness  
Director  
Mr Brown  
Deputy Director  
(Act) Mr Di Marca

MITRE  
Tech Advisor  
Mr Trasko





# Product Work Breakdown Structure





# **Technology Transition & Architecture Division (DIAT)**

- **Mission**
- **Operations**
- **Current Technology Transition Examples**
- **Recent Activities**



# Technology Transition & Architecture Division (DIAT)

**Global Awareness  
Director  
Mr Brown**  
**Deputy Director  
(Act)Mr Di  
Marca** DIA

**Technology  
Transition &  
Architecture  
Div  
Mr. Di Marca**

**DIAT**

## DIA MISSION

### OBJECTIVE 3

- Establish a structured process within the Global Awareness PAD for influencing the Technology Transition Process

### DIRECTION

- Task 3.1. - Collaborate with the A&SC2A and the Technology
- Planning Integrated Product Teams (TPIPTs) to provide global awareness inputs to roadmaps and technology assessments
  - - Participate in MAP and TPIPT processes
  - - Establish a Technology Transition Initiative Process to transfer technology
  - - Establish a formal relationship with the AFRL, DoD and national labs, industry, and academia
  - - Support SPO tradeoff analyses



# Technology Transition & Architecture Division (DIAT)

## DIAT

## M I S S I O N

- **Search, Identify and Investigate State-of-the-Art Global Awareness Technology that PAD has the potential to:**
  - **Do More with Less**
    - Personnel (Current Trent-Downsizing)
    - Funding (Less \$ To Go Around)
  - **Leveraging Current Developments**
  - **Perform Multiple Missions**
  - **Enhance capability**
  - **Improve operations**
  - **Reduce maintenance**
  - **Lower costs**
    - Acquisition
    - Operations & Maintenance
- **Develop Tech Database, Concept Solutions & Distribute to Global Awareness C2 SPO Customers & User Community**



# **Technology Transition & Architecture Division (DIAT)**

**H  
O  
W  
  
T  
O  
  
E  
X  
E  
C  
U  
T  
E**

- **Awareness of Threat**
  - Present and Potential Future Threats
- **Awareness of C2 SPOs & Users Requirements**
  - Mission Area Analysis - Operations Requirements
  - Mission Area Plans - CONOPS
- **Awareness of Technological Developments**
  - COTS/GOTS (Industry & Government)
  - AFRL/National Labs/Academia
- **Awareness of Current Capabilities**
- **Awareness of C2 Current Programs Status**
- **Awareness of Potential Technology Transition Opportunities**
  - Mission Solution Analysis





# Technology Transition & Architecture Division (DIAT)

**T  
E  
C  
H.  
  
A  
W  
A  
R  
E  
N  
E  
S  
S**

- **Seminars & Symposium**
- **R&D Literature/Trade Journals**
- **Industry Interactions**
  - Independent Research & Development
  - Concept Calls
- **Government Agencies Interactions**
  - Army      - LABS
  - Navy      - Academia
  - NASA
  - Intell Community
  - Etc
- **TPITS & MAPs Participation**



# Technology Transition & Architecture Division (DIAT)

## EXAMPLE 1: TECHNOLOGY TRANSITION

### AWARENESS OF TECHNOLOGICAL DEVELOPMENTS

INDUSTRY (HP & INTEL) JOINT VENTURE TO PRODUCE A NEW FAMILY OF MICROPROCESSOR

- CODE NAME "MERCED"
- CLOCK SPEED: 900Mz (E) - 3X FASTER THAN LATEST PENTIUM II, 4 Million (E) Transistors
- PROCESSES DATA 64 BITS @ A TIME VS 32 FOR

- PENTIUM
- WILL BE INTRODUCED IN 1995 (E)

### CONCEPT DISTRIBUTION

- TPIPT Participation
- Concept Calls Submission
- Mission Area Solution

### ASSESSMENT PHASE

- Req. Analysis
- Tech Assessment
- Current Capability
- Assessment
- Potential Enhancement Options
- Concept development

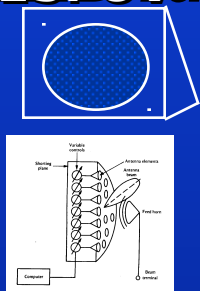


# Technology Transition & Architecture Division (DIAT)

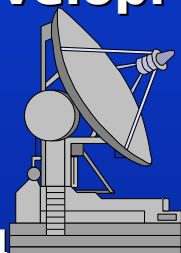
## EXAMPLE 2: SENSOR TECHNOLOGY TRANSITION

**AWARENESS** **ASSESSMENT PHASE** **EQUIPMENT: Investigate Cost Effective Solution for FORWARD BASED X-BAND DISH RADAR STUDY/ANALYSIS RESULTS**

**REFLECTOR TYPE SPACE FEED Array** **+ State of the Art Dish Radar Develop.**



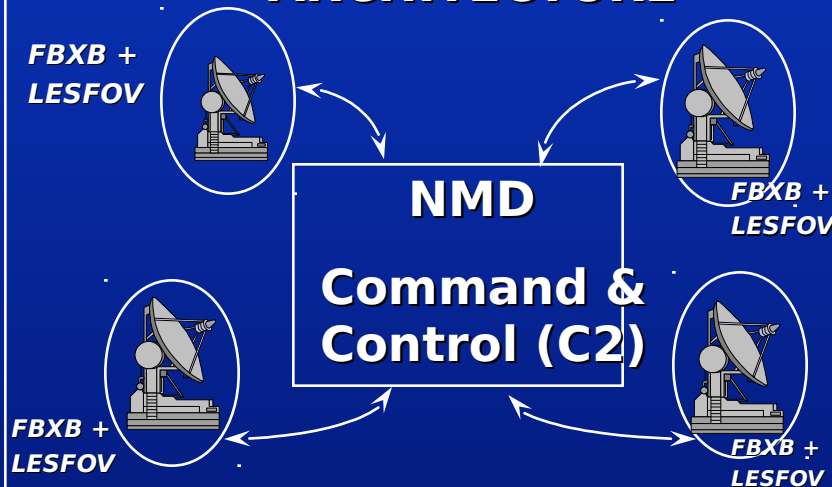
+



Reflector Type Space Feed Array

**SENSOR TECHNOLOGY TRANSITION INTO NEW SENSOR ARCHITECTURES DEVELOPMENT**

**NATIONAL MISSILE DEFENSE ARCHITECTURE**





# Technology Transition & Architecture Division (DIAT)

## EXAMPLE 3: SENSOR TECHNOLOGY TRANSITION

*REQUIREMENT: Investigate Development of Cost Effective Mobile Imaging*

A  
W  
A  
R  
E  
N  
E  
S  
S

- Technology Assessment Study
- Industry & Government Inter.

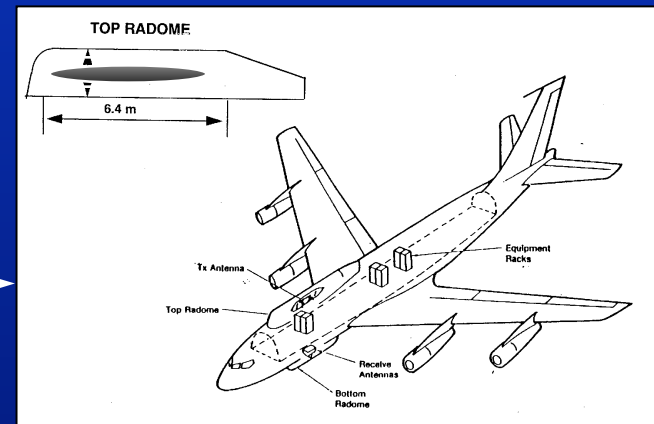
*Radar Capability to support BMDO R&D Developments*



**SENSOR TECHNOLOGY  
TRANSITION INTO NEW  
SENSOR DEVELOPMENT**

**ASSESSMENT PHASE**

## BIG CROW IMAGING RADAR STUDY RESULTS CONCEPT DISTRIBUTION





# **Technology Transition & Architecture Division (DIAT)**

## **RECENT ACTIVITIES**

- **Developed preliminary Airborne Radar Sensor design (BIG CROW) to support BMDO R&D testing, C2 & NMD architecture integration**
  - **Delivered Tech Report to BMDO/TOT**
  - **Prepared concept paper for OSD Central Test & Evaluation Investment Programs**
- **Provided High Power Sensor Tech Transition Support to ESC/ND**
  - **Evaluated high power HAVE STARE radar design for applicability to NMD forward based X-Band dish radar (XBDR) application & Sensor Contribution to Command & Control, e.g. BMC3**
  - **Produced Technical Report and delivered to BMDO NMD JPO**
  - **Provided Architecture development XBDR performance analysis based on evolving threat scenarios**



# **Technology Transition & Architecture Division (DIAT)**

## **RECENT ACTIVITIES**

- **Initiated Management of the Sensor Migration to Space Study**
  - Briefing given by MITRE to Chief Scientist, Under Sec of AF
  - Planning for Future Briefings to General Staff
- **Commenced NAIC sponsored Workstation Data Fusion Pilot Workstation concept development**
  - TO&P with MITRE generated
- **Established contact and communication with DARPA Information Systems,**
- **Sensor Technology and Tactical Technology Offices**
  - Requested to review potential GAPAD support to DARPA
  - Established and identified applicable POCs



# **Technology Transition & Architecture Division (DIAT)**

## **RECENT ACTIVITIES**

- **Established contact and communication with Defense Intelligence Agency CMO applicable data fusion & correlation offices.**
  - Requested to provide “state-of-the-art” OTH sensor workstation/display info to CMO
  - Identified and established contact with applicable MASINT Data Fusion/Correlation POCs
- **Initiated development of a Technology Data Base for distribution**
  - Candidates for technology transfer being identified
  - Will serve as inputs to concept development, TPIPTs, MSAs, MAPs